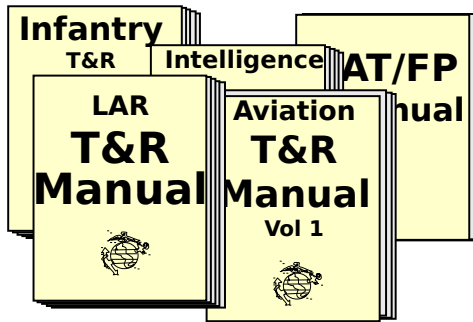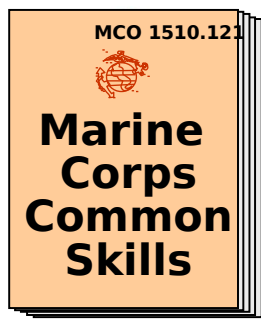# USMC LVC
The Way Ahead
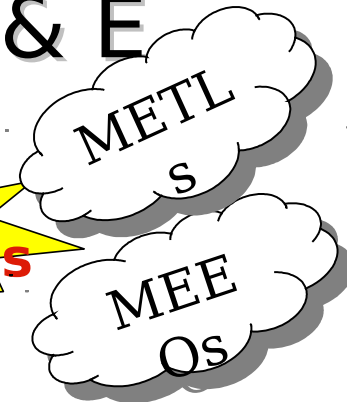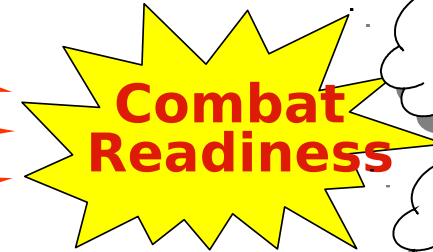
Dr. Mike Bailey   LtCol Bob Armstrong

Technical Director   Deputy Director

Training and Education Command

Framework for All Things T & E

MCO 1510.121

Marine Corps Common Skills

Infantry T&R

LAR T&R Manual

Intelligence

Aviation T&R Manual Vol 1

AT/FP Manual

E N A B L E

Combat Readiness

METLS

MEEOs

Pvt / 2ndLt

Training and Education Continuum

SgtMaj / Gen

Entry Level Trng

Unit Training

Skill Progression Training

Professional Military Education

Common Skills Training

MAGTFery

Warfighting

Expeditionary

Naval Ops

Doctrine

EMW & Strategy 21 Core Competencies

OPLANS   **Joint Requirements**   **OSD Initiatives**

2
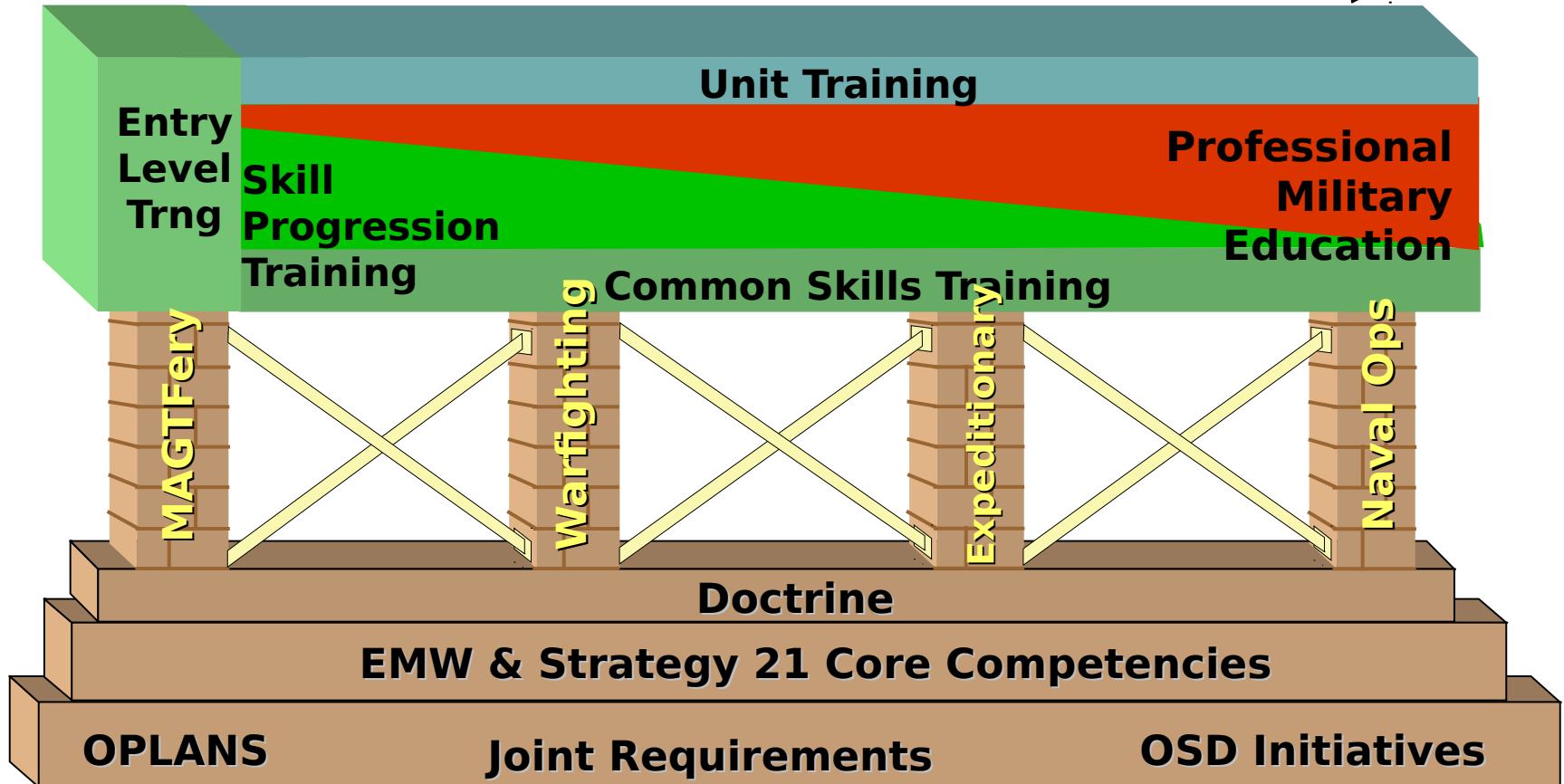
Training & Education Continuum

- All Training **<u>MUST</u>** Fit Within The T&E Framework
- Provides Focus on Development and Sustainment of Warfighting Skills
- Assists in Setting Priority of Expenditure and Effort

Foundation of our T&E Continuum

MAGTFery | Warfighting | Expeditionary | Naval Ops

Doctrine

EMW & Strategy 21 Core Competencies
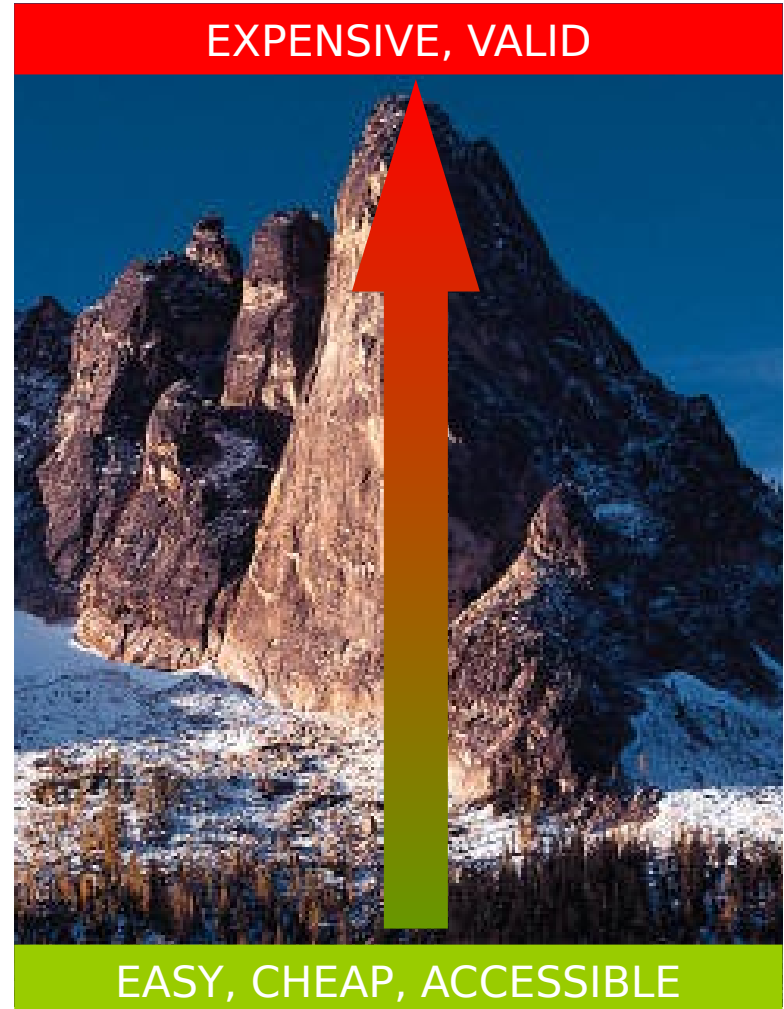
OPLANS | Joint Requirements | OSD Initiatives
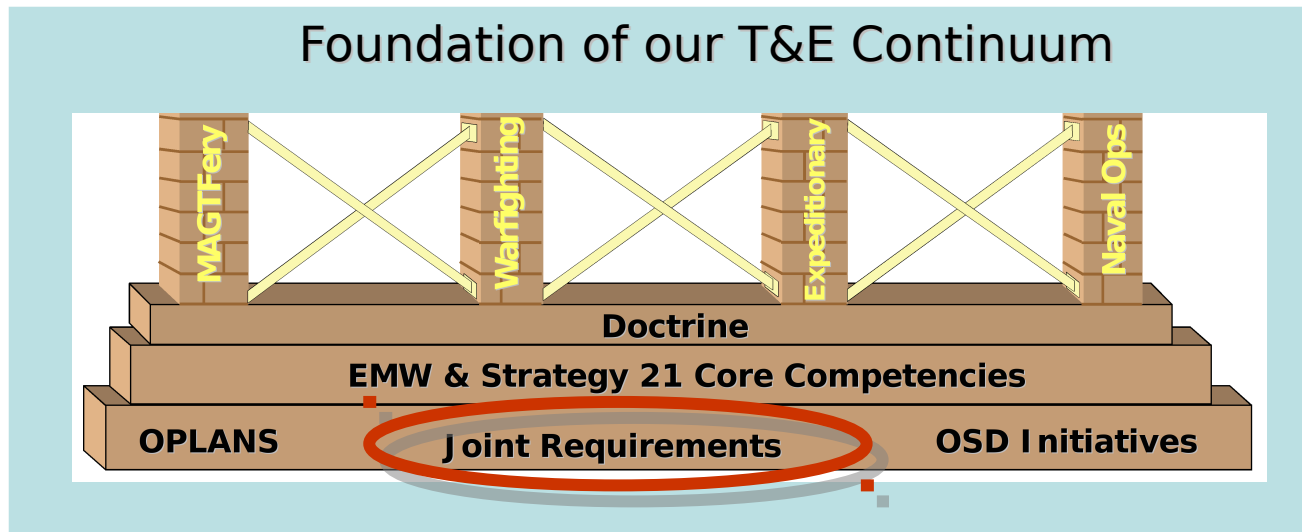
The Training Spectrum

LVC Coverage

Combat ->

Instrumented LiveEX ->

LiveEX ->

TEWT (FSCEX) ->

Virtual Exercise ->

Supported SimEX (Phase III) ->

Tactical Decision Simulation ->

Pract. App./Sand Table/CAST ->

Classroom Instr. (Phase II) ->

Interactive Multimedia ->

Asynchronous, Text Based

EXPENSIVE, VALID

EASY, CHEAP, ACCESSIBLE

End State For LVC Training

TSPE Instrumentati

C4I

Training Forces/Training Areas

ANALOG & DIGITAL LINK

DCEE

USMC

C4I

Other Bases / Centers

JNTC

CASTs Sim Centers

C4I

| C L A S S | C A C C T U S | M T W S | D V T E | A A R | J W A R S |

Situational Awareness
Training Distribution
Target Shoot-Back
Simulation Injects
Robust AAR
3D Visualization
Safety
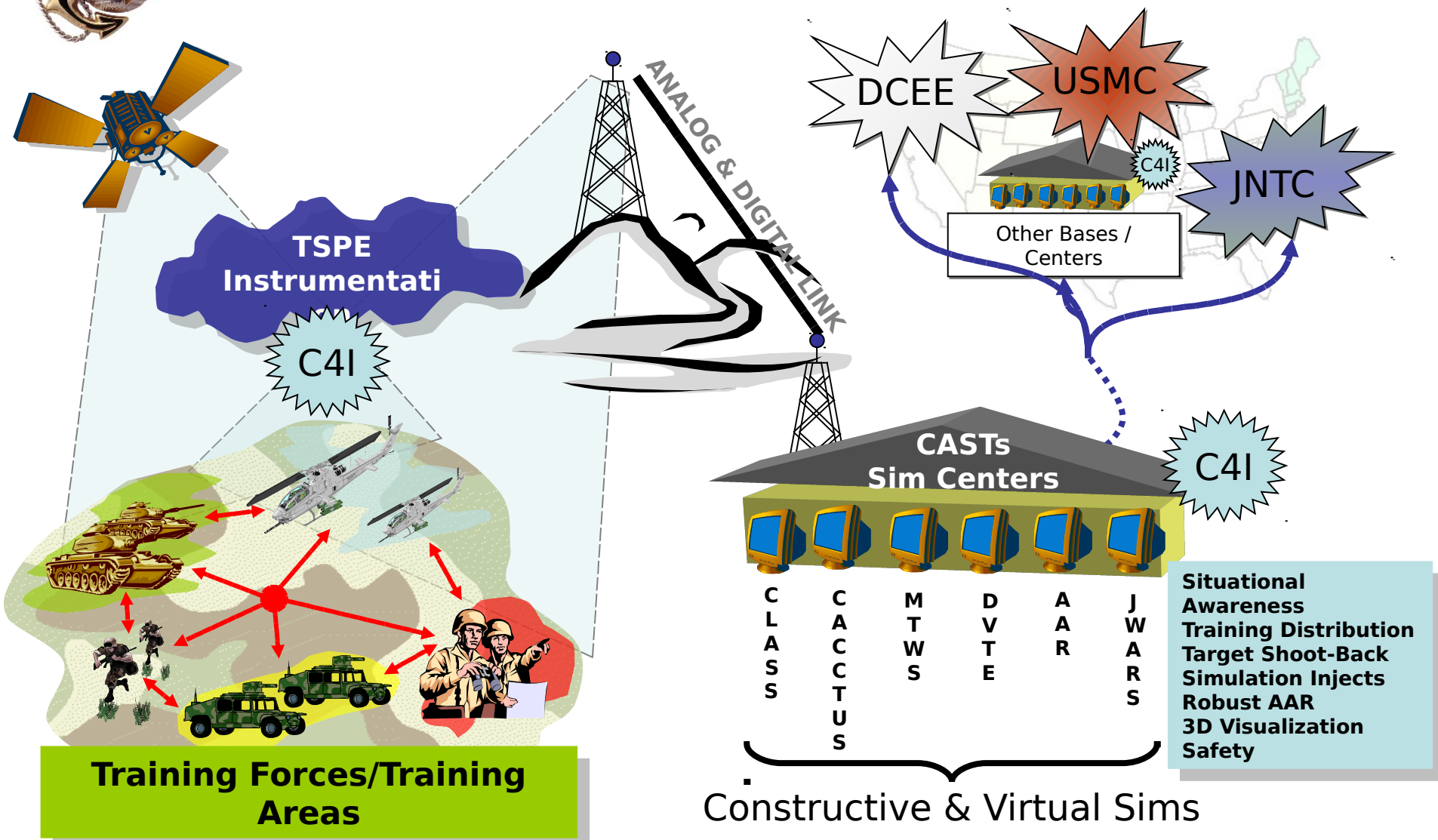
Constructive & Virtual Sims

Live, Virtual, Constructive

- **Live Training**
 - – Real people operating real systems
- **Virtual Simulation**
  - – Replication of tasks and decision-making environment, usually for small teams and individuals
  - – Involve real people operating simulated systems
  - – Human in the loop is essential
- **Constructive Simulation**
  - – Simulations appropriate for staff training, wherein individual people and things are aggregated in order to provide a more manageable fidelity for the training audience
  - – Involve simulated people operating simulated systems
  - – Real people stimulate events, but are not involved in determining outcomes

The Way Ahead is Interoperable LVC

- Addresses USMC Horizontal and Vertical Seams
- Maintains Focus on Live Training
  - Live-Fire brings Challenges
- Addresses Accountability
- Addresses Inter-Service

JNTC
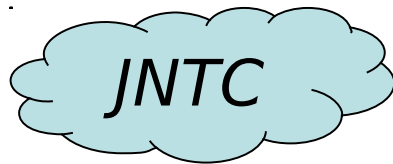
Our Solution Set

Range Investment
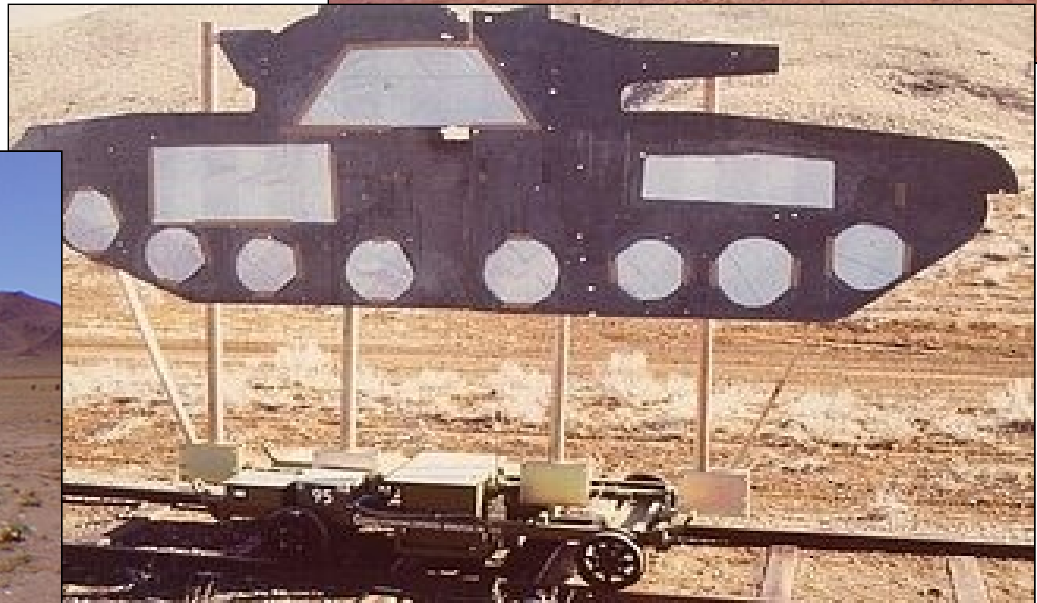
USMC Live Training

Sample Events

- Combined Arms Exercise
- WTI
- MOUT
- MEU preparation
- Mountain warfare training
- Jungle warfare training
- Unit specific training
- Fixed Range Training
- TEWTs

Live Training Tools

- Live fire and maneuver ranges
- Ammunition
- Targets
- Special Effects Small Arms Marking System (SESAM)
- MILES/MILES 2000
- IGRS/PLI/NACTS/LATR
- Minor Training Devices

Instrumentation

End State For LVC Training

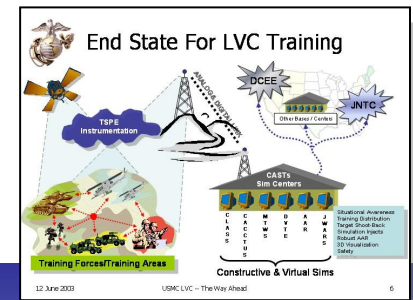## ENVIRONMENTS
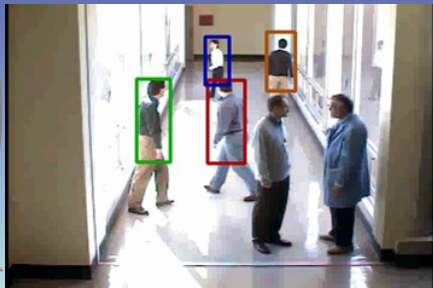
CLOSE QUARTERS	TRANSITIONAL	MOUT	OUTDOOR
Relative proximity and focus on entity behaviors	**Different tracking systems, changing scope**	**Complex line of sight**	**Long haul communications and bandwidth requirements**

HOME RUN

CHALLENGES

VIDEO	IBS/RF-Tagging	GPS

TRACKING SOLUTIONS

USMC Virtual Simulations

- Indoor Simulated Marksmanship Trainer (ISMT-E)
- ~~Combat Vehicle Training System (CVTS)~~
- Closed Loop Artillery Simulation System (CLASS)
- Virtual At-Sea Trainer (VAST)
- Tactical Decision Making Simulation (TDMS)
- Deployable Virtual Training Environment (DVTE)

DVTE and VAST Demonstrated

SAF
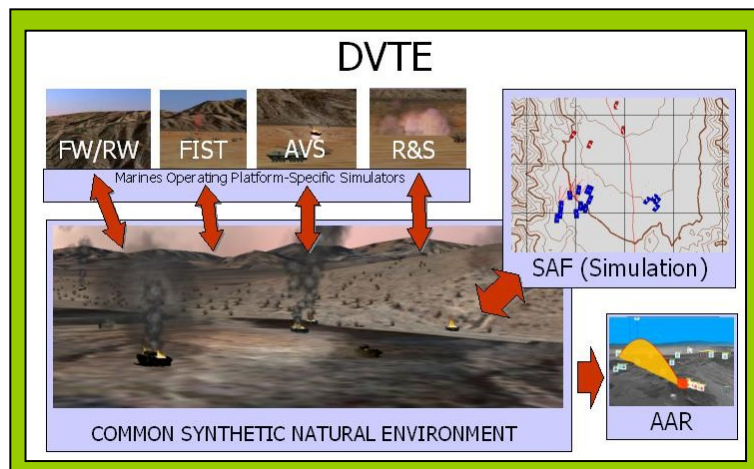
- **BFTT Afloat**
- **Air VAST**
- **Fixed Instrumentation (EGLIN)**
- **JNTC Federation**
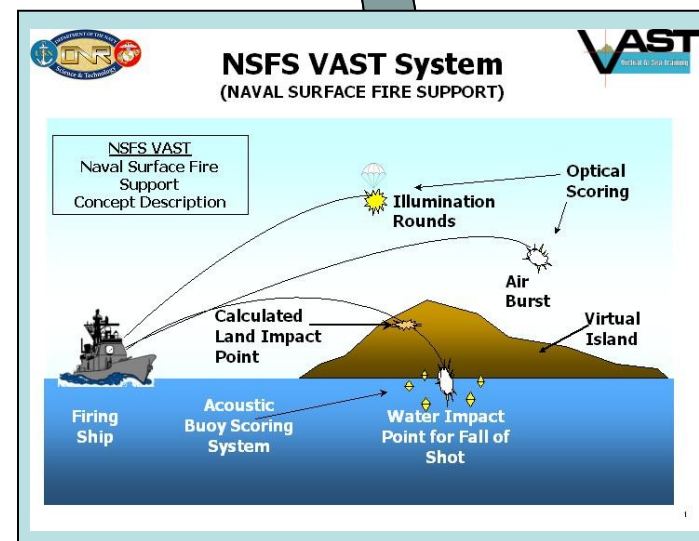
Battle Simulation Centers

New
MTSS
Contract

III MEF

BSTF

MAGTF TC

II MEF

I MEF

MTWS
JCATS
DVTE
ITK
CAST
ISMT-E
MISTC
TSFO

- Government Employees & Marines
- Contractor Personnel
- Supporting MSTP & Site-specific Training Events
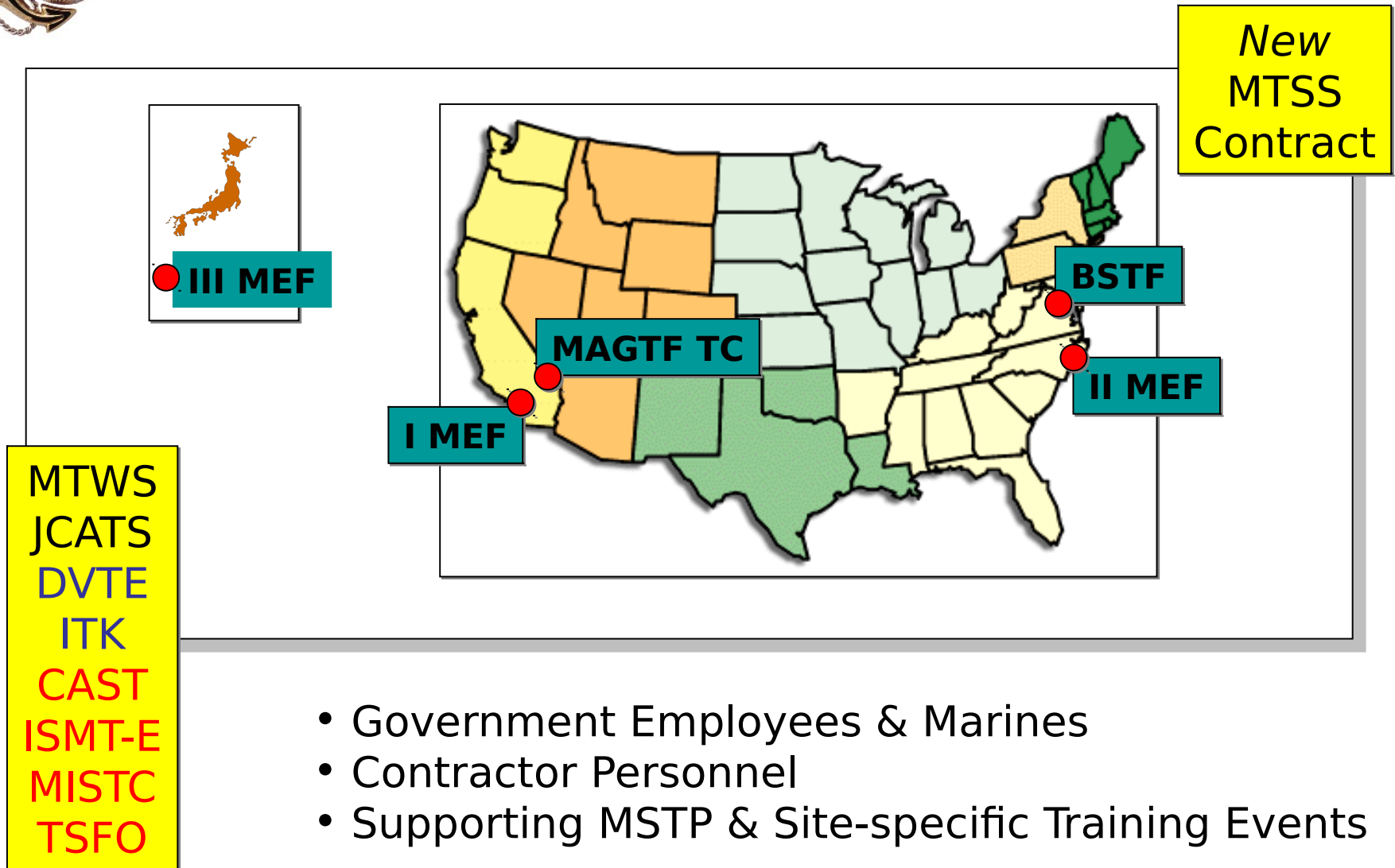
USMC Constructive Simulations

- MAGTF Tactical Warfare Simulation (MTWS)
- Joint Conflict and Tactical Simulation (JCATS)
- **Combined Arms C2 Training Upgrade System** (CACCTUS)

ONESAF

CACCTUS Essential Elements

- Train to standards
- Entity level simulation
- Authentic models
- Controllable BDA, attrition
- Controllable model b
- After Action Revi
- Time manage
- Authentic
- Sens
- D
  co

- Re   rain
-          nario
-          and analog
-          onfigurable comm
  system
- Link to other bases/stations
- 3-D photorealistic display
- Depiction of trajectories and control measures
- Detection, display of danger areas

SIMULATION

CACCTUS – The Backbone of USMC's LVC Strategy

CACCTUS Framework

I MEF

II MEF

MAGTF-TC

BSTF

III MEF

LIVE

VIRTUAL

CONSTRUCTIVE

C2/C4I
RIS
PLI
MILES 2000

CVTS
ISMT-E
CLASS
DVTE
C2/C4I

Sim Centers
C2/C4I
JNTC

Linkages to LVC World
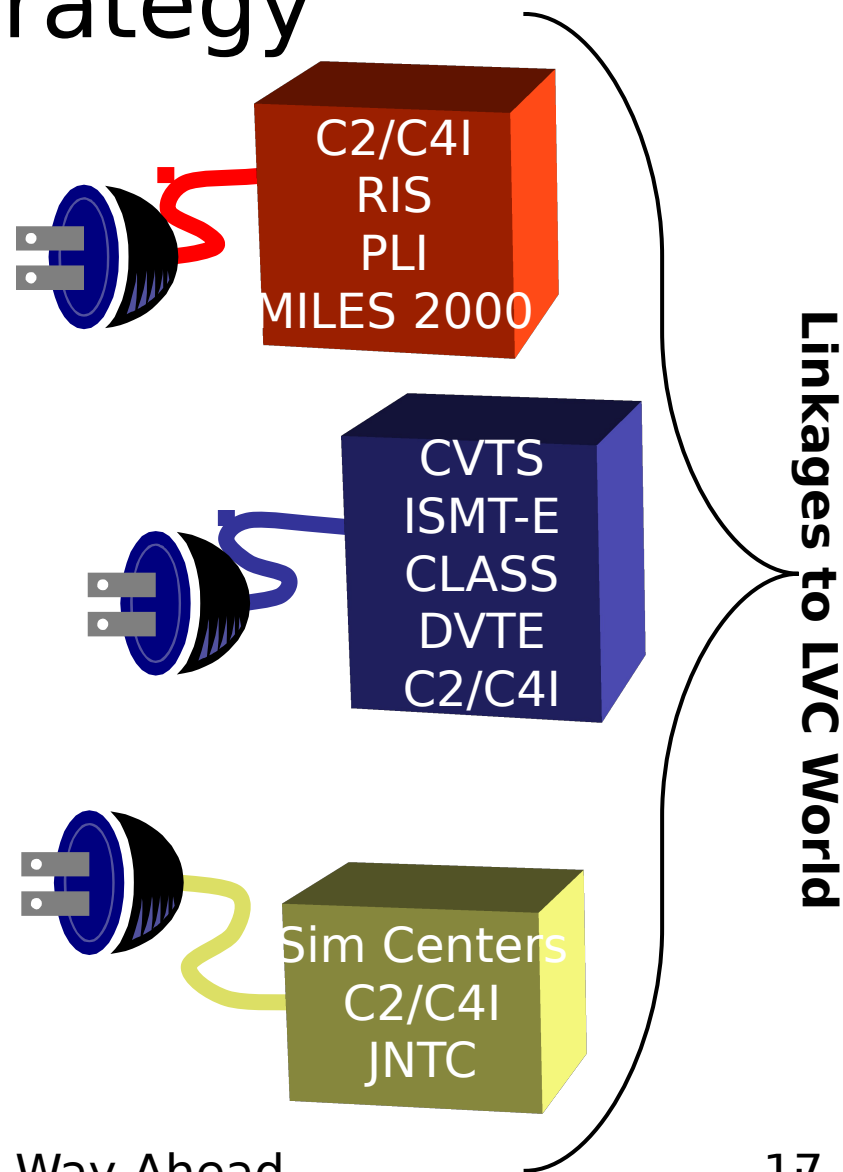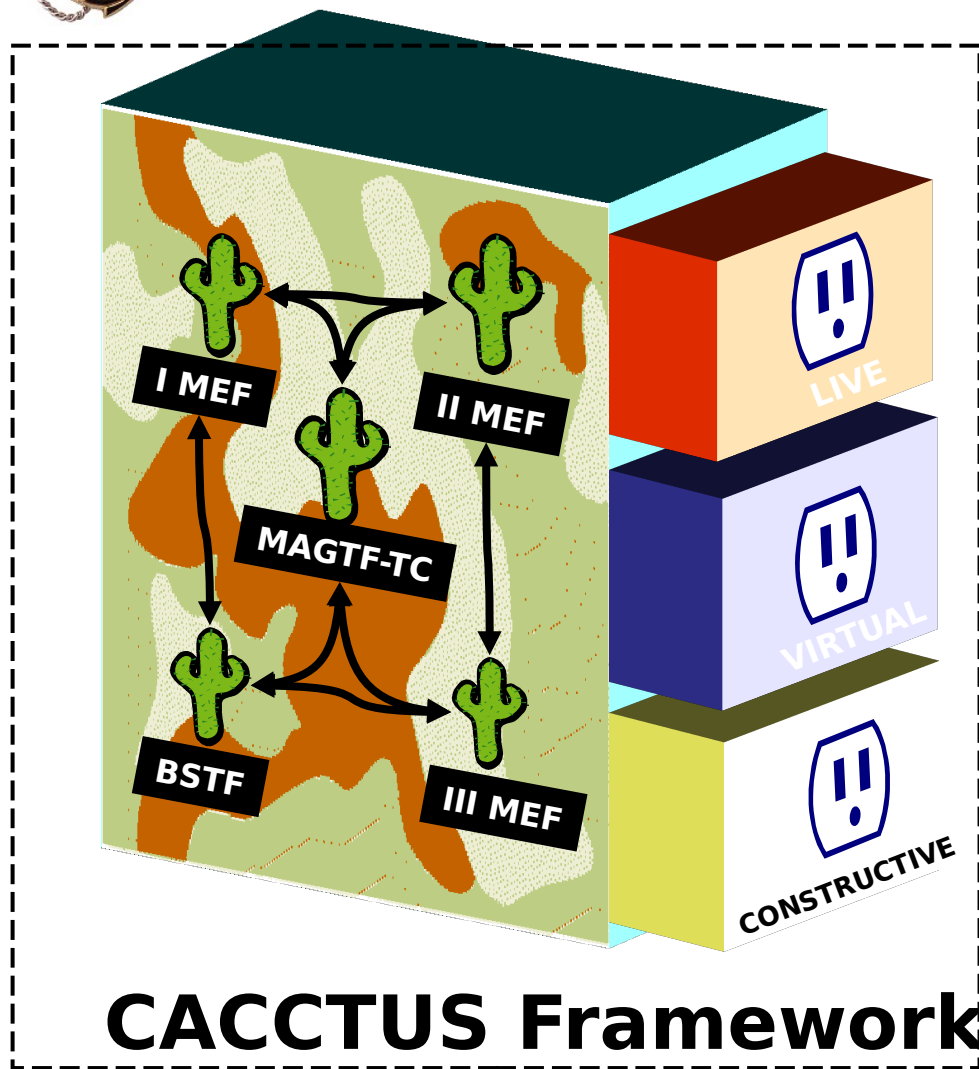
Distributed Training Events

CACCTUS ENABLED

NV

MWTC

FRTC NAS Fallon

MCBH & OKI

CA

NTC

NTTR Nellis AFB

CE training from separate locations

BSTF, Quantico

Camp Lejeune

Camp Pen

AZ

MCAS Miramar

MAWTS-1 MCAS Yuma

Links to Navy

Supports OSD Initiative:Joint Training Capability
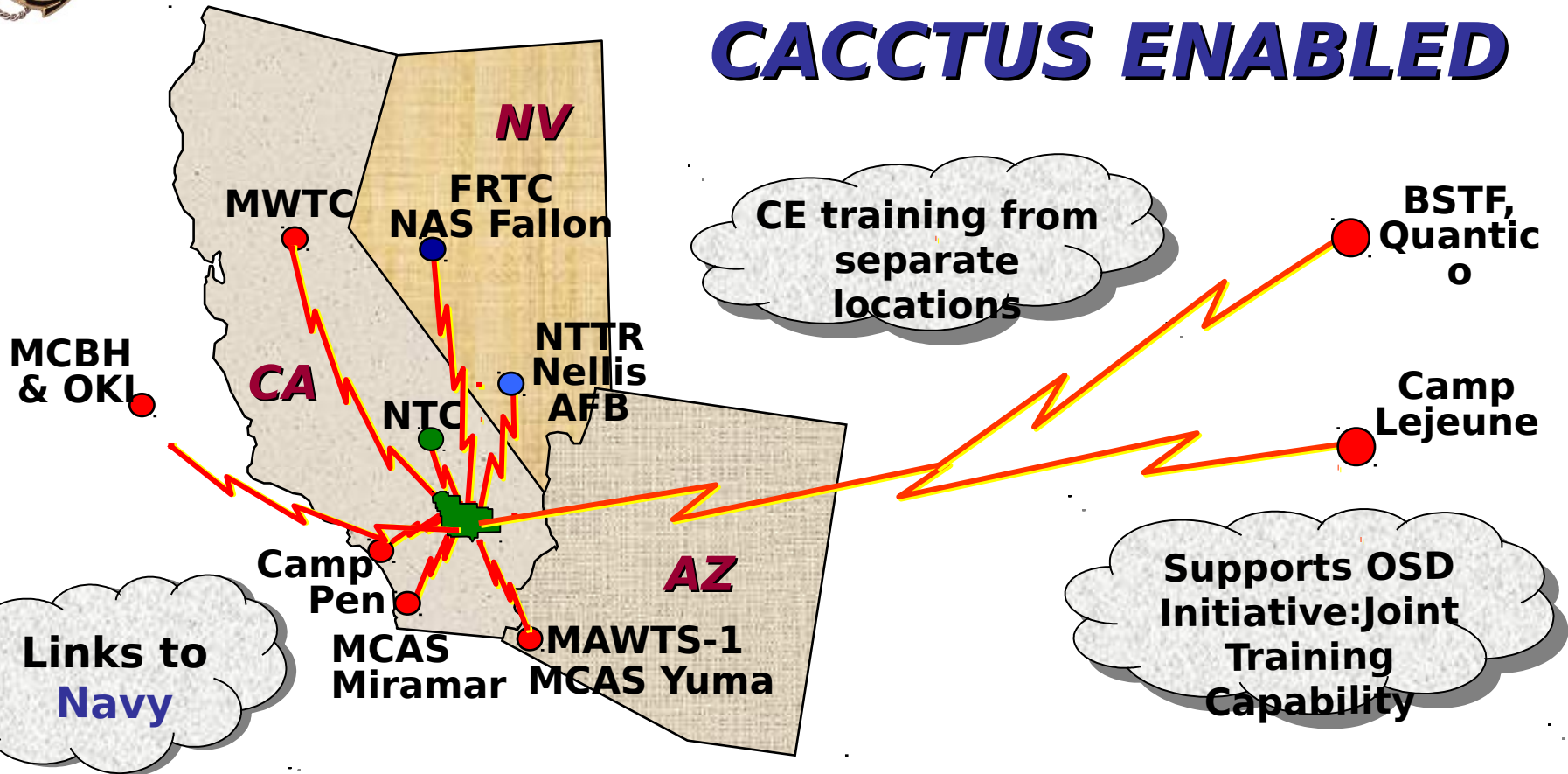
USING CASTs, BSTFs, NAVY and JOINT SIM CENTERS

CACCTUS and the JNTC

JNT NET

EUCOM
SOUTH - COM
JFCOM
PACOM
CENT - COM

NV
MWTC
FRTC
NAS Fallon
NTTR
Nellis
AFB
MCBH
& OHI
CA
NSC
MAGTFTC
Camp
Pen
AZ
MCAS
Miramar
MAWTS-1
MCAS Yuma

End State For LVC Training

DCEE

JNTC

Other Bases / Centers

TSPE
Instrumentation

ANALOG & DIGITAL LINK

CASTs
Sim Centers

C L A S S | C A C C T U S | M T W S | D V T E | A A R | J W A R S

Situational Awareness
Training Distribution
Target Shoot-Back
Simulation Injects
Robust AAR
3D Visualization
Safety

Training Forces/Training Areas

Constructive & Virtual Sims

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JNTC

United States Joint Forces Command
"Leading the way in Transformation"

Joint National Training Capability

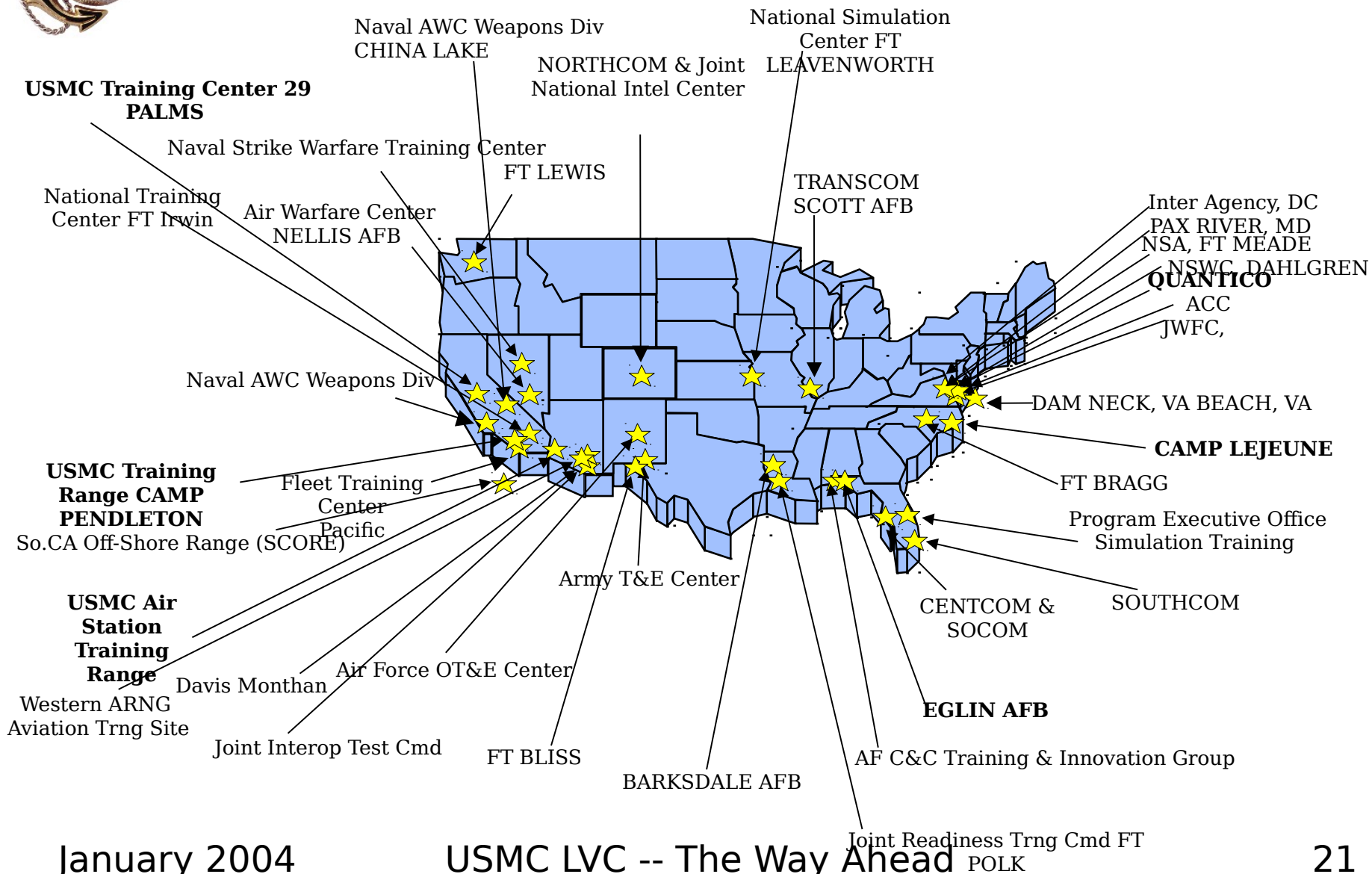| 1st Training Transformation Service Major Training Centers	2nd Training Transformation Joint National Training Capability
Realistic Combat Training →	• **Appropriate Joint context-horizontal / vertical** • **Employs joint doctrine / tactics / techniques** • **Live training with simulation / stimulation** • **Mission rehearsal implications** • **Realistic information ops and C4ISR** • **Potentially deployable / distributable**
Opposing Forces →	• **Multi-dimensional peer / adversary** • **Asymmetric challenges** • **Diverse targets / threats**
Ground Truth →	• **Integrated range instrumentation** • **Joint Observer / Trainers** • **Certified, accredited**
Feedback →	• **Focus on joint performance outcomes** • **Ability to assess concepts and doctrine** • **Feeds joint lessons learned** • **Promotes Joint Training System use**

JNTC Sites

Naval AWC Weapons Div
CHINA LAKE

National Simulation
Center FT
LEAVENWORTH

NORTHCOM & Joint
National Intel Center

USMC Training Center 29 PALMS

Naval Strike Warfare Training Center
FT LEWIS

National Training
Center FT Irwin

Air Warfare Center
NELLIS AFB

TRANSCOM
SCOTT AFB

Inter Agency, DC
PAX RIVER, MD
NSA, FT MEADE
NSWC, DAHLGREN
QUANTICO
ACC
JWFC,

Naval AWC Weapons Div

DAM NECK, VA BEACH, VA

USMC Training Range CAMP PENDLETON

Fleet Training
Center
Pacific

CAMP LEJEUNE

FT BRAGG

So.CA Off-Shore Range (SCORE)

Program Executive Office
Simulation Training

Army T&E Center

CENTCOM &
SOCOM

SOUTHCOM

USMC Air Station Training Range

Western ARNG
Aviation Trng Site

Davis Monthan

Air Force OT&E Center

EGLIN AFB

Joint Interop Test Cmd

FT BLISS

AF C&C Training & Innovation Group

BARKSDALE AFB

Joint Readiness Trng Cmd FT POLK

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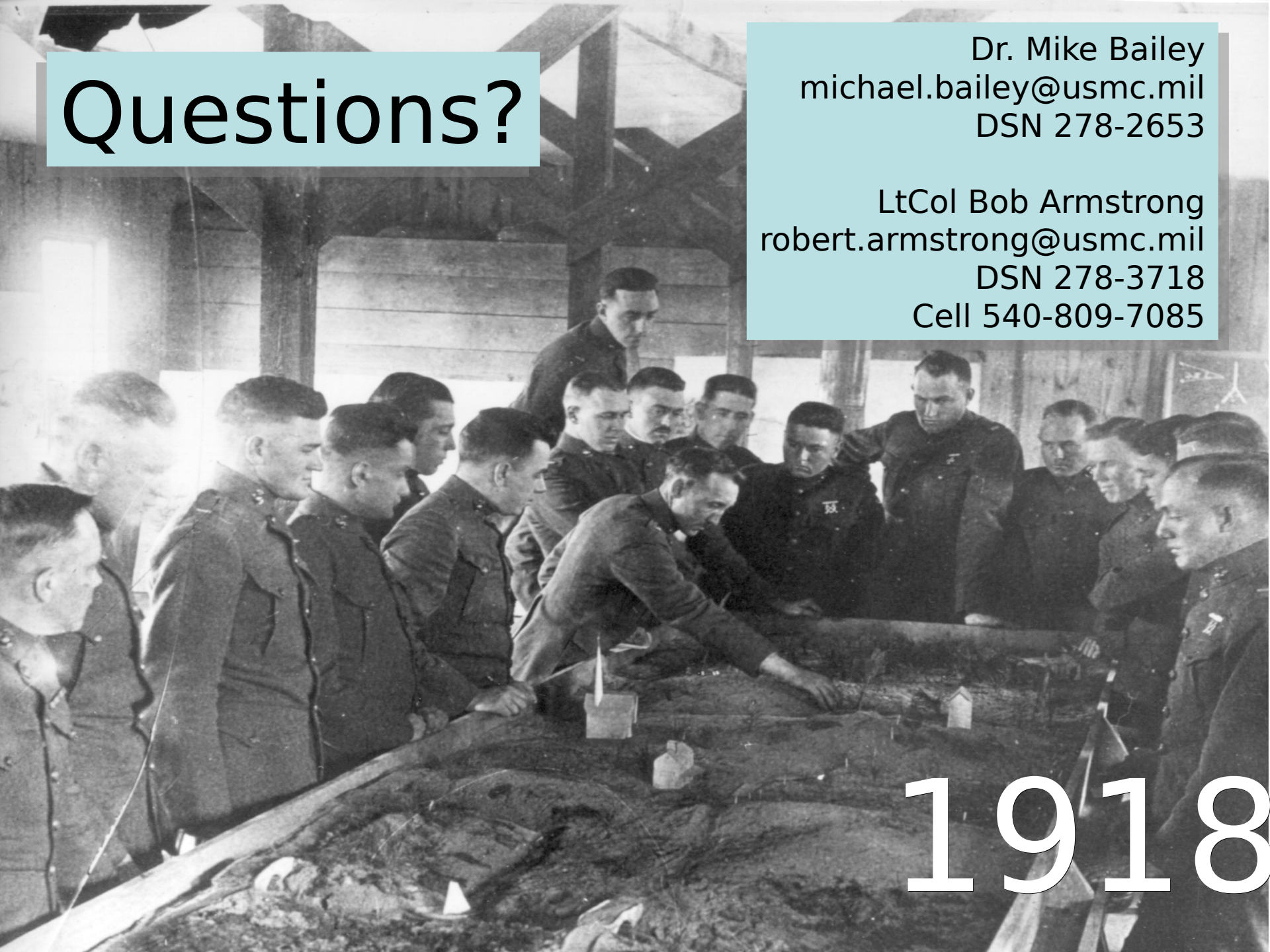
CACCTUS: Initial Focus on MAGTFTC

- Comprehensive Training Environment
  - Live Fire Combined Arms and Maneuver Training
  - MAGTF Staff Training
  - 10 CAXes per year

- Focal Point for USMC L-V-C Integration
  - CAX is the Integration Event
  - **CACCTUS is the Backbone**

Questions?

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DSN 278-3718
Cell 540-809-7085

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